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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/892,816	06/27/2001	Richard A. McGrew	042390.P11006	3501

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BLAKELY SOKOLOFF TAYLOR & ZAFMAN
12400 WILSHIRE BOULEVARD, SEVENTH FLOOR
LOS ANGELES, CA 90025

EXAMINER

SHAH, SAUMIL R

ART UNIT	PAPER NUMBER
2186	

DATE MAILED: 11/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/892,816

Applicant(s)

MCGREW ET AL.

Examiner

Saumil Shah

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06/27/2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-6, 10-13, 18-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Wells et al (US Patent No 5,535,369).

- a. With regard to claim 1, Wells et al disclose a method comprising:

receiving a request to download data into the flash memory (note column 14, lines 2-4);

halting the downloading of the data into the flash memory until the flash memory is initialized (note column 8, lines 19-22 where initialization is interpreted as the power-up of the entire system and so even before any request for data download comes in, the flash memory is "initialized"), wherein the initialization includes storing pointers in a memory to different locations within the flash memory where the data is to be stored (note column 8, lines 19-22 where "SHTT" is generated at power-up. Further note column 7, lines 42-43 where SHTT translates a sector number into a pointer to an associated sector); and

storing the data into the flash memory based on the pointer stored in the memory (note column 14, lines 49-51 where SN means the sector number translated by the SHTT to a pointer pointing to a sector for storing the data).

b. With regard to claim 2, Wells et al disclose the method of claim 1, wherein the initialization of the flash memory comprises:

generating headers for the different locations within the flash memory where the data is to be stored (note column 5, lines 11-12 where disk formatting can be interpreted as initializing); and

storing the headers at the different locations within the flash memory (note figure 3 where the header is stored at the different locations in flash memory and each sector is continued where the actual data is stored).

c. With regard to claim 3, Wells et al disclose the method of claim 1, further comprising storing the data received from the download into a number of buffers prior to storing the data into the flash memory (note column 14, lines 4-5 where the data is stored in a sector buffer before writing to the flash memory).

d. With regard to claim 4, Wells et al disclose the method of claim 1, wherein the initialization of the flash memory comprises reclaiming space within the flash memory that is reclaimable for storage of data into the flash memory (note column 8, lines 55-61 where the marking of "dirty" headers is carried out during initialization. Further note figure 18, where block 404 decides if the percentage of dirty blocks exceeds a trigger point. This trigger point could also be set to the minimum which means that any "dirty" block would result in incrementing the

counter for blocks to be cleaned up (406). Further note block 400 where the decision to clean up takes place and if this exceeds 0 then the clean-up process is initiated which is the same as reclaiming "dirty" blocks. Also note column 26, lines 7-32 which explains figure 18).

e. With regard to claim 5, Wells et al disclose a method comprising:

receiving a request from an external device to store data into a flash memory of a device (note column 14, lines 3-4 where the external device is the CPU), wherein the request includes the size of the data (note column 16, lines 17-20 where the algorithm requires the size of the sector to be written. This has to provided to it and so the write command has to include the size of the sector to be written);

initializing the flash memory of the device prior to receiving the data (note column 16, lines 15-17), wherein the initializing comprises:

determining whether the size of the free space within the flash memory is greater than the size of the data (note column 18, lines 36-38); and

upon determining that the size of the free space within the flash memory is not greater than the size of the data, reclaiming space within the flash memory (note column 19, lines 18-22 where the clean-up routine is the same as reclaiming space which is "dirty" as is further taught by column 23, lines 4-9).

f. With regard to claim 6, Wells et al disclose the method of claim 5, further comprising:

generating headers for each of a number of different locations within the flash memory where the free space is located (note column 5, lines 11-12 where disk formatting can be interpreted as initializing);

storing the headers into the number of different locations within the flash memory (note figure 3 where the header is stored at the different locations in flash memory and each sector is continued where the actual data is stored);

storing pointers, in a separate memory, to the number of different locations within the flash memory where the free space is located (note column 8, lines 19-22 where "SHTT" is generated at power-up. Further note column 7, lines 42-43 where SHTT translates a sector number into a pointer to an associated sector. Also, note that the SHTT is stored in the RAM) ;

transmitting a signal to the external device to transmit the data after the initialization of the flash memory is completed (note column 18, lines 66-67 where returning the header to the caller is an indication that the initialization is complete. Here initialization has been interpreted as allocation of memory to an incoming write request)

receiving the data into a number of buffers within the device (note column 14, lines 4-5 where the data is stored in a sector buffer before writing to the flash memory); and

storing the data within the number of buffers into the number of different locations within the flash memory where the free space is located

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(note column 14, lines 4-5 where the data is stored in a sector buffer before writing to the flash memory and it is obvious that data will be stored into the free space within the flash memory).

g. With regard to claims 10-13, Wells et al disclose the subject matter explained for claims 5-6 above.

h. With regard to claims 18-21, Wells et al disclose the subject matter explained for claims 1-4 above.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 7-9, 14-17, 22-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wells et al. (US Patent No. 5,535,369) in view of See et al. (US Patent No. 6,189,070).

a. With regard to claim 7, Wells et al. disclose everything except the following feature:

i. The device is a cellular telephone and the external device is a server coupled to a network and wherein the data is transmitted to the cellular telephone through a wireless transmission link. See et al. teach an apparatus of managing data and reading of code from a nonvolatile writeable memory (one type is a flash

card), as in Wells et al., in which the system is further employed in a cellular phone (note column 4, lines 53-55). In any case, it was well known in the cellular communication art to use a server coupled to a network in order to transmit data to a cellular telephone through a wireless transmission link.

Hence, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have deployed the system taught by Wells et al in a cellular telephone, in the manner of See et al., since it would have enabled the storage of data in a flash memory contained in the cellular phone so that various parameters of the cellular phone required for proper functionality could be changed easily, efficiently and very rapidly.

b. With regard to claim 8, Wells et al. disclose everything except the following feature:

disabling interrupts within the device when the portions of the data are being written into the number of different locations in the flash memory.

See et al. further teach disabling interrupts within the device when the portions of the data are being written into the number of different locations in the flash memory (note column 5, lines 3-6 where a write is also a non-read operation).

Hence, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have disabled interrupts as taught

by See et al. so that the processor does not automatically vector into the flash memory in response to the interrupt and disrupt any writing that is going on, since this would have protected the device against any erroneous writes into the flash memory.

c. With regard to claim 9, the combined system of Wells et al. and See et al. teach everything of claim 8. See et al further teaches:

Determining whether interrupts are pending in the device periodically during the time the data is being written into the number of different locations in the flash memory (note column 5, lines 4-7); and

Periodically halting the writing of the data into the number of different locations in the flash memory and servicing the interrupts that are pending in the device upon determining the interrupts are pending (note column 4, lines 6-10).

Hence, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate into the combined system of Wells et al./See et al., the further feature of See et al. which is to periodically determine where there are interrupts pending during the time data is being written to the flash memory and further to periodically halt the writing of the data and service the interrupts that are pending since this would allow the processor of the device to control when to service interrupts and at the same time all the interrupts would be serviced despite disabling them.

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d. With regard to claims 14-17, the combined system of Wells et al and See et al. teach the subject matter as is explained for claims 1, 5-7.

e. With regard to claims 22-26, the combined system of Wells et al and See et al. teach everything as is explained in claims 5-9 above.

For claim 23, Wells et al. further teach that the separate memory is a random access memory (note column 8, lines 21-22 where the SHTT is stored in the RAM and contains the pointers).

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Applicant is strongly encouraged to consider these references prior to drafting any response to this office action.

a. Hasbun et al (US Patent No. 6,412,040) in which the request contains the size of the data that is going to be sent. Also, the headers are located at the top of the area where data is going to be stored in the flash memory.

b. Hasbun (US Patent No. 5,671,388) in which the reclamation operation reclaims memory when the memory array does not contain enough memory to accommodate the write operation.

c. Rasmussen (US Patent No. 6,640,334) in which the cellular phone that contains FLASH memory is connected through the wireless link to a server.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Saumil Shah whose telephone number is 703-305-8786. The examiner can normally be reached on 9:00 AM to 5:30 PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matt Kim can be reached on 703-305-3821. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.



Saumil Shah
Examiner
Art Unit 2186

14 November, 2003



BEHZAD JAMES PEIKARI
PRIMARY EXAMINER